

## REMARKS

Applicants respectfully request consideration of the subject application as amended herein. This Amendment is submitted in response to the Office Action mailed April 15, 2004. In the Preliminary filed on July 31, 2003, claims 13-26 have been canceled. Applicants are not expressing an opinion on the claims 13-26 at this moment since they are canceled. Claims 1-12 are currently pending in this application.

The Examiner has rejected claim 15 under 35 U.S.C. §112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claim 15 has been canceled.

Claim 21 is rejected under 35 U.S.C. §112, second paragraph, as being incomplete for omitting essential structural cooperative relationships of elements, such omission amounting to a gap between the necessary structural connections. Claim 21 has been canceled.

Claims 13-26 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-13 of U.S. Patent No. 6,703,685. Claims 13-26 have been canceled.

Claims 1, 13, 14, 16, and 22 are rejected under 35 U.S.C. §102(b) as being anticipated by Suzuki (U.S. Patent No. 6,232,638, hereinafter "Suzuki '638"). Claims 13-14, 16 and 22 have been canceled.

Applicants respectfully submit that Suzuki '638 does not disclose each and every element in claim 1. Applicant respectfully submits that Suzuki '638 does not disclose each

and every element in claim 1. Suzuki '638 does not teach a self-aligned recess disposed between the emitter stack and the first isolation structure. The only thing in Suzuki '638 that can even be said to be similar to the recess is the collector trench 116 (Figures 1 and 4a). As can be seen from Suzuki '638, (Figures 1 and 4a), the trench 116 is physically separated from the emitter stack 114 by a dielectric region, the isolation oxide region 102. Thus, contrary to the Examiner's misunderstanding, the trench 116 is not disposed between the emitter stack and the first isolation structure as claimed in Applicant's claim 1.

Additionally, in Applicant's claim 1, the trench, or recess 138, is flushed against the emitter and is not separated from the emitter by the isolation structure. In fact, the recess 138 is placed between the emitter stack and the first isolation structure. See for example, Figures 3-5 of Applicant's disclosure. The recess 138 is thus self-aligned (or automatically aligned) with the emitter stack. In Suzuki '638, there is no such self-aligned recess and furthermore, the collector trench 116 is separated from the emitter stack by the isolation oxide region 102 and is thus not self-aligned. An advantage of Applicant's feature as claimed in claim 1 is that the device can be made smaller with lower resistance as discussed in Applicant's disclosure, for example, on page 9 beginning with line 4.

Therefore, Suzuki '638 does not anticipate Applicant's claim 1. Applicant thus respectfully requests the withdrawal of this rejection.

Claims 7-11 and 18-20 are rejected under 35 U.S.C. §103(a) as being unpatentable over Suzuki '638. Claims 18-20 have been canceled.

Claims 7-11 depend from claim 1 and are thus similarly not made obvious by Suzuki '638.

As discussed above, Suzuki '638 does not teach a self-aligned recess disposed between the emitter stack and the first isolation structure. Thus, even if one of ordinary skill in the art would have formed the bipolar junction transistor and/or the emitter stack as

described in claims 7-11, one would have not thought of forming the self-aligned recess between the emitter stack and the first isolation structure.

Therefore, Suzuki '638 does not make obvious Applicant's claim 1. Applicant thus respectfully requests the withdrawal of this rejection.

Claims 1, 2, 12-14, 16, 17 and 22 are rejected under 35 U.S.C. §102(b) as being anticipated by Suzuki (U.S. Patent No. 6,476,452, hereinafter "Suzuki '452"). Claims 16-17 and 22 have been canceled.

Applicants respectfully submit that Suzuki '452 does not disclose each and every element in claims 1, 2, and 12. Suzuki '452 does not teach a self-aligned recess disposed between the emitter stack and the first isolation structure. As can be seen from Suzuki '452, (Figures 12 and 17), the collector trench is physically separated from the emitter stack by at least one dielectric region (e.g., an isolation oxide region). Thus, contrary to the Examiner's misunderstanding, the collector trench (or a recess) is not disposed between the emitter stack and the first isolation structure and is not self-aligned as claimed in Applicants' claims 1, 2, and 12.

As mentioned above, in Applicants' claims, the trench, or recess 138 is flushed against the emitter and is not separated from the emitter by the isolation structure. In fact, the recess 138 is placed between the emitter stack and the first isolation structure. See for example, Figures 3-5 of Applicants' disclosure. The recess 138 is thus self-aligned (or automatically aligned) with the emitter stack. In Suzuki '452, the collector trench 116 is separated from the emitter stack by the isolation oxide region 102 and is thus not self-aligned.

Therefore, Suzuki '452 does not anticipate Applicants' claims 1, 2, and 12. Applicants thus respectfully request the withdrawal of this rejection.

Claims 7-11, 18-20, and 23-26 are rejected under 35 U.S.C. §103(a) as being unpatentable over Suzuki '452. Claims 18-20 and 23-26 have been canceled.

As discussed above, Suzuki '452 does not teach a self-aligned recess disposed between the emitter stack and the first isolation structure. Thus, even if one of ordinary skill in the art would have formed the bipolar junction transistor and/or the emitter stack as described in claims 7-11, one would have not thought of forming the self-aligned recess between the emitter stack and the first isolation structure.

As for claim 2, Suzuki '452 does not have the self-aligned recess and thus it cannot be said that Suzuki '452 teaches the self-aligned collector tap. As for claim 12, even if there is a buried layer in the structure of the prior art, there is no teaching, suggestion, or motivation about the self-aligned recess disposed between the emitter stack and the first isolation structure.

Therefore, Suzuki '452 does not anticipate Applicants' claims 1, 2, and 12. Applicants thus respectfully request the withdrawal of this rejection.

As discussed above, the pending claims are patentable over the above reference.

#### **ALLOWABLE SUBJECT MATTER**

Applicant thanks the Examiner for indicating that claim 3-6 contain allowable subject matter if rewritten in independent form to include all the limitations of the base claims and any intervening. Claims 3-6 have been so amended. In view of these amendments, Applicant respectfully submits that claims 3-6 are now in condition for allowance, and request allowance of said claims.

If the Examiner determines the prompt allowance of these claims could be facilitated by a telephone conference, the Examiner is invited to contact Mimi Dao at (408) 720-8300.

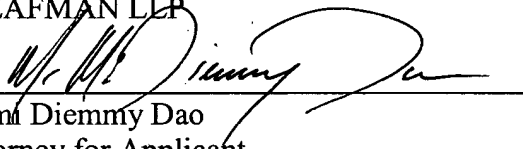
**DEPOSIT ACCOUNT AUTHORIZATION**

Authorization is hereby given to charge our Deposit Account No. 02-2666 for any charges that may be due. Furthermore, if an extension is required, then Applicant hereby requests such extension.

Respectfully submitted,

BLAKELY, SOKOLOFF, TAYLOR  
& ZAFMAN LLP

Dated: June 10, 2004

  
\_\_\_\_\_  
Mimi Diemmy Dao  
Attorney for Applicant  
Registration No. 45,628

Customer No. 008791  
12400 Wilshire Boulevard  
Seventh Floor  
Los Angeles, CA 90025-1026  
(408) 720-8300